



**DEPARTMENT OF JUSTICE**

**Drug Enforcement Administration**

**21 CFR Part 1300**

**[Docket No. DEA-341F]**

**RIN 1117-AB31**

**Classification of Two Steroids, *Prostanozolol* and *Methasterone*, as Schedule III Anabolic Steroids under the Controlled Substances Act**

**AGENCY:** Drug Enforcement Administration (DEA), Department of Justice.

**ACTION:** Final Rule

**SUMMARY:** With the issuance of this Final Rule, the Administrator of the DEA classifies the following two steroids as “anabolic steroids” under the Controlled Substances Act (CSA): prostanozolol (17 $\beta$ -hydroxy-5 $\alpha$ -androstand[3,2-c]pyrazole) and methasterone (2 $\alpha$ ,17 $\alpha$ -dimethyl-5 $\alpha$ -androstan-17 $\beta$ -ol-3-one). These steroids and their salts, esters, and ethers are Schedule III controlled substances subject to the regulatory control provisions of the CSA.

**DATES:** *Effective Date:* [INSERT DATE 30-DAYS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**FOR FURTHER INFORMATION CONTACT:** Alan G. Santos, Associate Deputy Assistant Administrator, Office of Diversion Control, Drug Enforcement Administration; Mailing Address: 8701 Morrissette Drive, Springfield, Virginia 22152; Telephone: (202) 307-7165.

## **SUPPLEMENTARY INFORMATION:**

### **Legal Authority**

The DEA implements and enforces Titles II and III of the Comprehensive Drug Abuse Prevention and Control Act of 1970, often referred to as the Controlled Substances Act and the Controlled Substances Import and Export Act (21 U.S.C. 801-971), as amended (hereinafter, “CSA”). The implementing regulations for these statutes are found in Title 21 of the Code of Federal Regulations (CFR), parts 1300 to 1321. Under the CSA, controlled substances are classified in one of five schedules based upon their potential for abuse, their currently accepted medical use, and the degree of dependence the substance may cause. 21 U.S.C. 812. The initial schedules of controlled substances by statute are found at 21 U.S.C. 812(c) and the current list of scheduled substances is published at 21 CFR Part 1308.

On November 29, 1990, the President signed into law the Anabolic Steroids Control Act of 1990 (Title XIX of Pub. L. 101-647), which became effective February 27, 1991. This law established and regulated anabolic steroids as a class of drugs under Schedule III of the CSA. As a result, a new anabolic steroid is not scheduled according to the procedures set out in 21 U.S.C. 811, but is administratively classified as an anabolic steroid through the rulemaking process if it meets the regulatory definition of an anabolic steroid in 21 CFR 1300.01.

On October 22, 2004, the President signed into law the Anabolic Steroid Control Act of 2004 (Pub. L. 108–358), which became effective on January 20, 2005. Section 2(a) of the Anabolic Steroid Control Act of 2004 amended 21 U.S.C. 802(41)(A) by replacing the existing definition of “anabolic steroid.” The Anabolic Steroid Control Act of 2004 classifies a drug or hormonal substance as an anabolic steroid if the following four criteria are met: (A) the substance is chemically related to testosterone; (B) the substance is pharmacologically related to testosterone;

(C) the substance is not an estrogen, progestin, or a corticosteroid; and (D) the substance is not dehydroepiandrosterone (DHEA). Any substance that meets these criteria is considered an anabolic steroid and must be listed as a Schedule III controlled substance.

## **Background**

In a Notice of Proposed Rulemaking (NPRM) published on November 23, 2011 (76 FR 72355), DEA proposed classification of two steroids as Schedule III anabolic steroids under the CSA: prostanazol and methasterone. DEA believes that prostanazol (17 $\beta$ -hydroxy-5 $\alpha$ -androstano[3,2-c]pyrazole) and methasterone (2 $\alpha$ ,17 $\alpha$ -dimethyl-5 $\alpha$ -androstan-17 $\beta$ -ol-3-one) meet this definition of anabolic steroid.

Anabolic steroids are a class of drugs structurally related to the endogenous hormone testosterone that exert androgenic (masculinizing) as well as anabolic (body building) effects. These effects are mediated primarily through binding of the anabolic steroid to the androgen receptor in target tissues (Evans, 2004). Anabolic effects include promotion of protein synthesis in skeletal muscle and bone, while the androgenic effects are characterized by the development of male secondary sexual characteristics such as hair growth, deepening of the voice, glandular activity, thickening of the skin, and central nervous system effects (Kicman, 2008). Anabolic efficacy is characterized by positive nitrogen balance and protein metabolism, resulting in increases in protein synthesis and lean body mass (Evans, 2004). These effects often come at a cost to the healthy individual who experiences clear physical and psychological complications (Trenton and Currier, 2005; Brower, 2002; Hall et al., 2005).

In the United States, only a small number of anabolic steroids are approved for either human or veterinary use. Approved medical uses for anabolic steroids include treatment of androgen deficiency in hypogonadal males, adjunctive therapy to offset protein catabolism associated with prolonged administration of corticosteroids, treatment of delayed puberty in boys, treatment of

metastatic breast cancer in women, and treatment of anemia associated with specific diseases (e.g., anemia of chronic renal failure, Fanconi's anemia, and acquired aplastic anemia). However, with the exception of the treatment of male hypogonadism, anabolic steroids are not the first-line treatment due to the availability of other preferred treatment options. DEA is not aware of any legitimate medical use or New Drug Applications (NDA) for the two substances that DEA is proposing to classify by this NPRM as anabolic steroids under the definition set forth under 21 U.S.C. 802(41)(A). Moreover, DEA has been unable to identify any chemical manufacturers currently using these substances as intermediates in their manufacturing processes.

Adverse health effects are associated with abuse of anabolic steroids and depend on several factors (e.g., age, sex, anabolic steroid used, the amount used, and the duration of use) (Hall and Hall, 2005; Quaglio et al., 2009). These include cardiovascular, dermatological, behavioral, hepatic, and gender specific endocrine side effects. Anabolic steroids have direct and indirect impact on the developing adolescent brain and behavior (Sato et al., 2008). Furthermore, adolescent abuse of anabolic steroids may result in stunted growth due to premature closure of the growth plates in long bones.

In adolescent boys, anabolic steroid abuse can cause precocious sexual development. In both girls and women, anabolic steroid abuse induces permanent physical changes such as deepening of the voice, increased facial and body hair growth, menstrual irregularities, and clitoral hypertrophy. In men, anabolic steroid abuse can cause testicular atrophy, decreased sperm count, and sterility. Gynecomastia (i.e., enlargement of the male breast tissue) can develop with the abuse of those anabolic steroids with estrogenic actions. In both men and women, anabolic steroid abuse can damage the liver and may result in high cholesterol levels, which may increase the risk of strokes and cardiovascular heart attacks. Furthermore, anabolic steroid abuse is purported to induce

psychological effects such as aggression, increased feelings of hostility, and psychological dependence and addiction (Brower, 2002; Kanayama et al., 2008).

Upon abrupt termination of long-term anabolic steroid abuse, a withdrawal syndrome may appear including severe depression. Additionally, polysubstance abuse is routinely associated with anabolic steroid abuse, where ancillary drugs, including recreational and prescription drugs, are abused in response to unwanted side effects (Hall et al., 2005; Parkinson et al., 2005; Skarberg et al., 2009).

A review of the scientific literature finds adverse health effects including liver toxicity with renal failure reported in conjunction with methasterone abuse (Shah et al., 2008; Jasiurkowski et al., 2006; Singh et al., 2009; Nasr and Ahmad, 2008; and Krishnan et al., 2009). In March 2006, the U.S. Food and Drug Administration (FDA) issued a Warning Letter in response to adverse health effects associated with the product Superdrol (methasterone). In July 2009, FDA issued a warning regarding bodybuilding products containing steroid or steroid-like substances. In this warning, a product containing the THP ether derivative of prostanazol was named in conjunction with other products presenting safety concerns.

### **Evaluation of Statutory Factors for Classification as an Anabolic Steroid**

With the issuance of this Final Rule, DEA classifies prostanazol (17 $\beta$ -hydroxy-5 $\alpha$ -androstan[3,2-c]pyrazole) and methasterone (2 $\alpha$ ,17 $\alpha$ -dimethyl-5 $\alpha$ -androstan-17 $\beta$ -ol-3-one) as anabolic steroids under the definition set forth under 21 U.S.C. 802(41)(A). As noted previously, a drug or hormonal substance is classified as an anabolic steroid by meeting the following four definitional requirements: (A) the substance is chemically related to testosterone; (B) the substance is pharmacologically related to testosterone; (C) the substance is not an estrogen, progestin, or corticosteroid; and (D) the substance is not DHEA.

## **(A) Chemically Related to Testosterone**

To classify a substance as an anabolic steroid, a substance must be chemically related to testosterone. A structure activity relationship (SAR) evaluation for each substance compared the chemical structure of the steroid to that of testosterone. Substances with a structure similar to that of testosterone are predicted to possess comparable pharmacological and biological activity.

Prostanozolol is also known by the following name: 17 $\beta$ -hydroxy-5 $\alpha$ -androstan[3,2-c]pyrazole. DEA determined that the chemical structure of prostanozolol is similar to testosterone, differing by only the attachment of a pyrazole ring at carbon 2 (C2) and carbon 3 (C3) positions of the androstane skeleton, replacing the C3-keto group and the lack of a double bond between carbon 4 (C4) and carbon 5 (C5) positions. Similar modifications to testosterone's chemical structure have been documented and, in general, they have been found to be well tolerated, displaying both anabolic and androgenic activity (Fragkaki et al., 2009; Vida, 1969). Clinton and coworkers, in their synthesis of prostanozolol, described the modification as a fusion of a pyrazole ring to the androstane steroidal nucleus at C2 and C3 (Clinton et al., 1961). Further analysis finds the chemical structure of prostanozolol to be very similar to the anabolic steroid stanozolol. The two structures differ only about a 17 $\alpha$ -methyl group (alpha methyl group attached to carbon 17).

Methasterone is known by the following chemical names: 2 $\alpha$ ,17 $\alpha$ -dimethyl-5 $\alpha$ -androstan-17 $\beta$ -ol-3-one; 2 $\alpha$ ,17 $\alpha$ -dimethyl-17 $\beta$ -hydroxy-5 $\alpha$ -androstan-3-one; 17 $\alpha$ -methyl-drostanolone; methasteron; methyl drostanolone; 2 $\alpha$ ,17 $\alpha$ -dimethyldihydrotestosterone; and 2 $\alpha$ ,17 $\alpha$ -dimethyl-etiocholan-17 $\beta$ -ol-3-one. DEA has determined that the chemical structure of methasterone is chemically related to testosterone. The chemical structure of methasterone differs from testosterone by the following three chemical groups: an alpha methyl group at carbon 17 (C17), an alpha methyl group at C2, and the lack of a double bond between spanning C4 and C5. Removal of the C4-C5

double bond (A-ring) and methylation at the C2 and C17 positions has been shown to increase anabolic activity (Zaffroni, 1960; Fragkaki et al., 2009). Furthermore, methyl group substitution at the C2 and C17 has been reported to impair aromatization, thus, prolonging the anabolic effect (Fragkaki et al., 2009).

## **(B) Pharmacologically Related to Testosterone**

A substance must also be pharmacologically related to testosterone (i.e., produce similar biological effects) to be classified as a Schedule III anabolic steroid. The pharmacology of a steroid, as related to testosterone, can be established by performing one or more of the following androgenic and anabolic activity assays: ventral prostate assay, seminal vesicle assay, levator ani assay, and androgen receptor binding and efficacy assays. These assays are described below.

Ventral Prostate Assay, Seminal Vesicle Assay, and Levator Ani Assay: The classic scientific procedure for evaluating androgenic (masculinizing) and anabolic (muscularizing) effects of a steroid is the ventral prostate assay, seminal vesicle assay, and levator ani assay. This testing paradigm allows for the direct comparison to testosterone. Select male accessory tissues (i.e., the ventral prostate, seminal vesicles, and levator ani muscle) are testosterone sensitive, specifically requiring testosterone to grow and remain healthy. Upon the removal of the testes (i.e., castration), the primary endogenous source of testosterone is eliminated causing the atrophy of the ventral prostate, seminal vesicles, and levator ani muscle (Eisenberg et al., 1949; Nelson et al., 1940; Scow, 1952; Wainman and Shipounoff, 1941). Numerous scientific studies have demonstrated the ability of exogenous testosterone or a pharmacologically similar steroid administered to rats following castration to maintain the normal weight and size of all three testosterone sensitive organs (Biskind and Meyer, 1941; Dorfman and Dorfman, 1963; Dorfman and Kincl, 1963; Kincl and Dorfman, 1964; Nelson et al., 1940; Scow, 1952; Wainman and Shipounoff, 1941). Thus, a steroid with

testosterone-like activity will also prevent the atrophy of these three testosterone-dependent organs in castrated rats.

Castrated male rats are administered the steroid for a number of days, then the rats are euthanized and the previously described tissues are excised and weighed. Tissue weights from the three animal test groups are compared, castrated animals alone, castrated animals receiving the steroid, and healthy intact animals (control), to assess anabolic and androgenic activity. A reduction in tissue weights relative to the control group suggests a lack of androgenic and/or anabolic activity. An increase in tissue weights relative to the castrated rats receiving no steroid suggests an androgenic and/or anabolic effect.

Androgen Receptor Binding and Efficacy Assay: Anabolic steroids bind with the androgen receptor to exert their biological effect. Affinity for the receptor is evaluated in the receptor binding assay, while the transactivation (functional) assay provides additional information as to both affinity and ability to activate the receptor. Receptor binding and transactivation studies are valuable tools in evaluating pharmacological activity and drawing comparisons to other substances. A steroid displaying affinity for the androgen receptor and properties of being an agonist in transactivation studies is determined to be pharmacologically similar to testosterone.

Studies used to evaluate anabolic steroids are the androgen receptor binding assay and the androgen receptor transactivation assay. Both are well-established and provide significant utility in evaluating steroids for affinity to their biological target and the modulation of activity. The androgen receptor binding assay provides specific detail as to the affinity of a steroid for the androgen receptor (biological target of anabolic steroids). To assess further whether the steroid is capable of activating the androgen receptor, the androgen receptor transactivation assay evaluates the binding of a steroid to the androgen receptor and subsequent interaction with DNA. In this study, transcription of a reporter gene provides information as to a steroid's ability to modulate a

biological event. This activity measurement provides information as to the potency of a steroid to bind to a receptor and either initiate or inhibit the transcription of the reporter gene. The androgen receptor binding assay and androgen receptor transactivation assay are highly valuable tools in assessing the potential activity of a steroid and comparing the activity to testosterone.

Results of the Androgenic and Anabolic Activity Assays: DEA reviewed the published scientific literature, and pharmacological studies were undertaken to collect additional information on prostanazol and methasterone in several different androgenic and anabolic activity assays. Findings from these studies indicate that in addition to being structurally similar to testosterone, prostanazol and methasterone have similar pharmacological activity as testosterone.

#### Prostanazol

The chemical synthesis and anabolic and androgenic effects of prostanazol (17 $\beta$ -hydroxy-5 $\alpha$ -androstan[3,2-c]pyrazole) were published in 1961 (Clinton et al., 1961). Clinton and coworkers evaluated the anabolic activity by means of nitrogen balance and androgenic activity based on weight changes of the ventral prostate of prostanazol upon subcutaneous administration to rats with the reference standard testosterone propionate. The potency ratio of anabolic activity to androgenic activity for prostanazol was reported to be eight (Clinton et al., 1961). In another study, prostanazol was reported to have approximately the same relative binding affinity for human sex steroid binding protein as testosterone (Cunningham et al., 1981).

To build on these findings, a pharmacological study<sup>1</sup> was conducted to evaluate the anabolic and androgenic effects of prostanazol in castrated male rats. Results were compared to testosterone by a similar protocol. Administration of prostanazol to castrated male rats by subcutaneous injection prevented the atrophy (loss in weight) of the ventral prostate, seminal vesicles, and levator ani

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<sup>1</sup> The study by Bioqual, Inc., Rockville, MD, may be found at <http://www.regulations.gov> in the electronic docket associated with this rulemaking.

muscle.<sup>1</sup> These testosterone sensitive tissues experienced increases in weight comparable to testosterone in castrated male rats. Results from this study support that prostanazol possesses both androgenic and anabolic activity. Additional studies were conducted to further assess prostanazol's anabolic effect. In a competitive binding assay, prostanazol was found to possess affinity for the androgen receptor comparable to testosterone.<sup>1</sup> In the androgen receptor transactivation assay, prostanazol displayed increased activity relative to testosterone.<sup>1</sup> Effects elicited by prostanazol in this transactivation assay were consistent and comparable to those of testosterone. Taken together, data from in vitro and in vivo assays indicate the pharmacology of prostanazol to be similar to testosterone.

### Methasterone

The synthesis of methasterone ( $2\alpha,17\alpha$ -dimethyl- $5\alpha$ -androstan- $17\beta$ -ol-3-one) was reported in 1956 and the anabolic activity in 1959 (Ringold and Rosenkranz, 1956; Ringold et al., 1959). Methasterone was described as a potent anabolic agent exhibiting weak androgenic activity in the castrated male rat (Ringold et al., 1959). Zaffaroni and coworkers reported methasterone possessed one-fifth the androgenic activity and four times the anabolic activity of the anabolic steroid methyltestosterone, when administered orally to the experimental animal (Zaffaroni et al., 1960).

Additional pharmacological studies were undertaken to further evaluate the androgenic and anabolic effects of methasterone.<sup>1</sup> Methasterone was administered subcutaneously and orally to castrated male rats. By both routes of administration, methasterone prevented the atrophy (loss in weight) of ventral prostate, seminal vesicles, and levator ani muscle. Tissue weight increases for the castrated methasterone-treated animals were comparable to the castrated rats treated with testosterone and methyltestosterone. These results were consistent with earlier findings that methasterone is anabolic and androgenic (Zaffaroni, 1960; Ringold et al., 1959). Functional assays were also undertaken to further evaluate methasterone.<sup>1</sup> Methasterone displayed affinity for the

androgen receptor comparable to testosterone in a competitive binding assay.<sup>1</sup> In the androgen receptor transactivation assay, methasterone displayed increased activity relative to testosterone.<sup>1</sup> Effects elicited by methasterone in the androgen transactivation assay were consistent and comparable to those of testosterone. Collectively, in vivo and in vitro results indicate that the pharmacology of methasterone is similar to testosterone.

### **(C) Not Estrogens, Progestins, and Corticosteroids**

DEA has determined that prostanazol and methasterone are unrelated to estrogens, progestins, and corticosteroids. DEA evaluated the SAR for each of the substances. The chemical structure of each substance was compared to that of estrogens, progestins, and corticosteroids, since chemical structure can be related to its pharmacological and biological activity. DEA found that these two substances lack the necessary chemical structures to impart significant estrogenic activity (e.g., aromatic A ring) (Duax et al., 1988; Jordan et al., 1985; Williams and Stancel, 1996), progestational activity (e.g., 17 $\beta$ -alkyl group) (Williams and Stancel, 1996), or corticosteroidal activity (e.g., 17 $\beta$ -ketone group or 11 $\beta$ -hydroxyl group) (Miller et al., 2002). Furthermore, methasterone was reported to display anti-estrogenic activity in mouse assay to assess estrogen stimulated uterine growth (Dorfman et al., 1961). To assess the estrogenic, progestational, and corticosteroid activity of prostanazol and methasterone, these substances were evaluated in receptor binding and functional transactivation assays. Prostanazol and methasterone showed low binding affinity for the estrogen, progesterone, and glucocorticoid receptors. Furthermore, these steroids displayed low to no transactivation mediated by the estrogen receptors, progesterone receptors, or glucocorticoid receptors. Therefore, based on these data, prostanazol and methasterone are not estrogens, progestins, or corticosteroids and these anabolic steroids are not exempt from control on this basis.

#### (D) Not Dehydroepiandrosterone

Dehydroepiandrosterone, also known as DHEA, is exempt from control as an anabolic steroid by definition (21 U.S.C. 802(41)(A)). Prostanazol and methasterone are not dehydroepiandrosterone and therefore, are not exempt from control on this basis.

#### **Comments Received**

On November 23, 2011, DEA published a NPRM (76 FR 72355) to classify prostanazol and methasterone as Schedule III anabolic steroids. The proposed rule provided an opportunity for all interested persons to submit their comments on or before January 23, 2012. In response to the request, DEA received three comments.

Comment: One commenter disagreed that anabolic steroids, and in particular those encountered in dietary supplements, should be placed in Schedule III of the CSA. He indicated that classifying these substances as Schedule III anabolic steroids would force the public to procure other, non-regulated and unsafe substitutes from illicit sources in the future, and that DEA should employ an alternate method of regulation.

DEA Response: DEA disagrees with this comment. As stated in the NPRM and this Final Rule, these substances were found to be similar in structure and pharmacology to testosterone through substantive scientific evaluation and investigation. Further, the United States Food and Drug Administration has issued multiple warnings regarding dietary supplements, especially concerning contamination through novel synthetic steroids that do not qualify as dietary ingredients.

Regarding the commenter's request for alternative regulation of these substances. DEA regulates the manufacture, importation, export, distribution, and sale of controlled substances for medical, scientific, or other legitimate uses pursuant to the CSA. These substances have not been approved as safe for human consumption and, despite the commenter's unsubstantiated and

factually inaccurate claims of their benefits, should neither be consumed nor should other unapproved substances ever be sought from any source, illicit or otherwise.

The additional remarks this commenter made regarding a perceived disparity between men and women in access to hormonal products, and other perceived problems with the regulation of substances by the government, are not germane to this rulemaking.

Comment: Two separate commenters agreed placement of these two substances under the CSA was appropriate as provided per the Anabolic Steroid Control Act of 2004.

DEA Response: DEA appreciates the support for this rulemaking. As discussed above, prostanazol and methasterone are similar in structure and pharmacology to testosterone and are not approved for human consumption. DEA believes their placement into Schedule III as anabolic steroids will provide the appropriate safeguards to limit their availability to and prevent their abuse by the public.

## **Conclusion**

After evaluation of the statutory factors above and consideration of the comments to the NPRM, DEA concludes that prostanazol and methasterone meet the CSA definition of “anabolic steroid” because each substance is: (A) chemically related to testosterone; (B) pharmacologically related to testosterone; (C) not an estrogen, progestin, or a corticosteroid; and (D) not DHEA (21 U.S.C. 802(41)). Once a substance is determined to be an anabolic steroid, DEA has no discretion regarding the placement of these substances into Schedule III of the CSA.

## **Impact of Classification as Anabolic Steroids**

With the publication of this Final Rule, DEA classifies prostanazol (17 $\beta$ -hydroxy-5 $\alpha$ -androstano[3,2-c]pyrazole) and methasterone (2 $\alpha$ ,17 $\alpha$ -dimethyl-5 $\alpha$ -androstano-17 $\beta$ -ol-3-one) as Schedule III anabolic steroids subject to the CSA. Any person who manufactures, distributes, dispenses, imports, or exports prostanazol or methasterone, or who engages in research or conducts

instructional activities with respect to these two substances, will be required to obtain a Schedule III registration in accordance with the CSA and its implementing regulations.

As of the effective date of this Final Rule, the manufacture, import, export, distribution, or sale of prostanazol or methasterone, except by DEA registrants, is a violation of the CSA that may result in imprisonment and fines (see, e.g., 21 U.S.C. 841 and 960). Possession of these two steroids, unless legally obtained, is also subject to criminal penalties pursuant to 21 U.S.C. 844.

Manufacturers and importers of these two substances will be required to register with DEA and will be permitted to distribute these substances only to other DEA registrants. Only persons registered as dispensers will be allowed to dispense these substances to end users. The CSA defines a practitioner as “a physician, dentist, veterinarian, scientific investigator, pharmacy, hospital, or other person licensed, registered, or otherwise permitted, by the United States or the jurisdiction in which he practices or does research, to distribute, dispense, conduct research with respect to, administer, or use in teaching or chemical analysis, a controlled substance in the course of professional practice or research.” 21 U.S.C. 802(21). At present, there are no approved medical uses for these two substances. Until a manufacturer applies to the FDA and gains approval for products containing these substances, no person may dispense them in response to a prescription.

Additionally, these two substances may only be imported for medical, scientific, or other legitimate uses (21 U.S.C. 952(b)) under an import declaration filed with DEA (21 CFR 1312.18). Importation of these substances will be illegal unless the person importing these substances is registered with DEA as an importer or researcher and files the required declaration for each shipment. Any individual who purchases either of these substances directly from foreign companies and has them shipped to the United States will be considered to be importing even if the steroids are intended for personal use. Illegal importation of these substances will be a violation of the CSA that may result in imprisonment and fines pursuant to 21 U.S.C. 960.

## **Requirements for Handling Substances Defined as Anabolic Steroids**

As of the effective date of this Final Rule, prostanazol and methasterone are subject to CSA regulatory controls and the administrative, civil, and criminal sanctions applicable to the manufacture, distribution, dispensing, importation, and exportation of a Schedule III controlled substance, including the following:

Registration. Any person who manufactures, distributes, dispenses, imports, exports, or engages in research or conducts instructional activities with a substance defined as an anabolic steroid, or who desires to engage in such activities, will be required to be registered to conduct such activities with Schedule III controlled substances in accordance with 21 CFR Part 1301.

Security. Substances defined as anabolic steroids will be subject to Schedule III security requirements and will be required to be manufactured, distributed, and stored in accordance with 21 CFR 1301.71, 1301.72(b), (c), and (d), 1301.73, 1301.74, 1301.75(b) and (c), 1301.76 and 1301.77.

Labeling and Packaging. All labels and labeling for commercial containers of substances defined as anabolic steroids will be required to comply with the requirements of 21 CFR 1302.03–1302.07.

Inventory. Every registrant required to keep records and who possesses any quantity of any substance defined as an anabolic steroid will be required to keep an inventory of all stocks of the substances on hand pursuant to 21 U.S.C. 827 and 21 CFR 1304.03, 1304.04 and 1304.11. Every registrant who desires registration in Schedule III for any substance defined as an anabolic steroid will be required to conduct an inventory of all stocks of the substances on hand at the time of registration.

Records. All registrants will be required to keep records, as generally provided in 21 U.S.C. 827(a) and specifically pursuant to 21 CFR 1304.03, 1304.04, 1304.05, 1304.21, 1304.22, and 1304.23.

Prescriptions. All prescriptions for these Schedule III substances or for products containing these Schedule III substances, if approved in the future by FDA, will be required to be issued pursuant to 21 U.S.C. 829(b) and 21 CFR 1306.03–1306.06 and 1306.21–1306.27. All prescriptions for these Schedule III compounds or for products containing these Schedule III substances, if authorized for refilling, will be limited to five refills within six months of the date of issuance of the prescription. Controlled substance dispensing via the Internet will have to comply with 21 U.S.C. 829(e).

Importation and Exportation. All importation and exportation of any substance defined as an anabolic steroid will be required to be in compliance with 21 U.S.C. 952(b), 953(e), and 21 CFR Part 1312.

Disposal. Persons who possess substances that become classified as anabolic steroids and who wish to dispose of them rather than becoming registered to handle them should contact their local DEA Diversion field office for assistance in disposing of these substances legally pursuant to 21 CFR 1307.21. The DEA Diversion field office will provide the person with instructions regarding the disposal. A list of local DEA Diversion field offices may be found at <http://www.deadiversion.usdoj.gov>.

Criminal Liability. Any activity with any substance defined as an anabolic steroid not authorized by, or in violation of, the Controlled Substances Act or the Controlled Substances Import and Export Act will be unlawful.

## **Regulatory Analyses**

### **Regulatory Flexibility Act**

The Administrator hereby certifies that this rulemaking has been drafted in accordance with the Regulatory Flexibility Act (5 U.S.C. 601-612). This regulation will not have a significant

economic impact on a substantial number of small entities. As of March 2010, DEA had identified approximately 75 dietary supplements that were currently or had been promoted for building muscle and increasing strength that purported to contain prostanazol or methasterone. Thirteen dietary supplements were purported to contain prostanazol and 62 dietary supplements were purported to contain methasterone. These dietary supplements are marketed and sold over the Internet.

The manufacturers and distributors of dietary supplements purported to contain prostanazol and methasterone also sell a variety of other dietary supplements. DEA has identified a substantial number of Internet distributors that sell these dietary supplements. However, these distributors also sell a variety of other nutritional products. Without information on the percentage of revenues derived from these dietary supplements, DEA is not able to determine the economic impact of the removal of these dietary supplements alone on the business of the firms. These steroids have been the focus of warning letters issued by the FDA. However, products continue to be marketed despite these warnings. DEA has not been able to identify any chemical manufacturers that are currently using these substances as intermediates in their manufacturing process(es). As of March 2010, DEA had identified 13 chemical manufacturers and distributors that sell at least one of the two steroids. Most of these companies are located in China and sell a variety of other anabolic steroids. DEA notes that, as the vast majority of entities handling these substances are Internet based, it is virtually impossible to accurately quantify the number of persons handling these substances at any given time. DEA has not identified any company based in the United States that manufactures or distributes these substances. DEA notes, upon placement into Schedule III, these substances may be used for analytical purposes. These companies are registered with DEA and are already in compliance with the CSA and DEA implementing regulations regarding the handling of Schedule III substances.

### **Executive Orders 12866 and 13563**

This rulemaking has been drafted in accordance with the principles of Executive Order 12866, 1(b), as reaffirmed by Executive Order 13563. This rule is not a significant regulatory action but has been reviewed by the Office of Management and Budget. As discussed above, the effect of this rule will be to remove products containing these substances from the over-the-counter marketplace. DEA has no basis for estimating the size of the market for these products. DEA notes, however, that virtually all of the substances are imported. According to U.S. International Trade Commission data, the import value of all anabolic steroids in 2009 was \$5.9 million. These two substances would be a subset of those imports. The total market for products containing these substances, therefore, is probably quite small. Moreover, DEA believes that the importation of these two substances is for illegitimate purposes.

The benefit of controlling these substances is to remove from the marketplace substances that have dangerous side effects and no legitimate medical use in treatment in the United States. As discussed in detail above, these substances can produce serious health effects in adolescents and adults. If medical uses for these substances are developed and approved, the drugs would be available as Schedule III controlled substances in response to a prescription issued by a medical professional for a legitimate medical purpose. Until that time, however, this action will bar the importation, exportation, and sale of these two substances except for legitimate research or industrial uses.

### **Executive Order 12988**

This regulation meets the applicable standards set forth in Sections 3(a) and 3(b)(2) of Executive Order 12988 Civil Justice Reform.

### **Executive Order 13132**

This rulemaking does not preempt or modify any provision of State law; nor does it impose enforcement responsibilities on any State; nor does it diminish the power of any State to enforce its own laws. Accordingly, this rulemaking does not have federalism implications warranting the application of Executive Order 13132.

### **Executive Order 13175**

This rule will not have tribal implications and will not impose substantial direct compliance costs on Indian tribal governments.

### **Paperwork Reduction Act**

This rule regulates two anabolic steroids, which are neither approved for medical use in humans nor approved for administration to cattle or other non-humans. Only chemical manufacturers who may use these substances as chemical intermediates for the synthesis of other steroids would be required to register with DEA under the CSA. However, DEA has not been able to identify any chemical manufacturers that are currently using these substances as intermediates in their manufacturing processes. Thus DEA does not expect this rule to impose any additional paperwork burden on the regulated industry.

### **Unfunded Mandates Reform Act of 1995**

This rule will not result in the expenditure by state, local, and tribal governments, in the aggregate, or by the private sector, of \$136,000,000 or more (adjusted for inflation) in any one year, and will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995, 2 U.S.C. 1532.

### **List of Subjects in 21 CFR Part 1300**

Chemicals, Drug traffic control

For the reasons set out above, 21 CFR Part 1300 is amended as follows:

**PART 1300 – DEFINITIONS**

1. The authority citation for part 1300 continues to read as follows:

**Authority:** 21 U.S.C. 802, 821, 829, 871(b), 951, 958(f).

2. In § 1300.01, the definition of Anabolic steroid under paragraph (b) is amended by:

A. Redesignating paragraphs (32) through (63) as (33) through (64),

B. Adding a new paragraph (32),

C. Further redesignating newly designated paragraphs (58) through (64) as (59) through (65), and

D. Adding new paragraph (58).

The additions read as follows:

**§ 1300.01 Definitions relating to controlled substances.**

\* \* \* \* \*

(b) \* \* \*

Anabolic steroid \* \* \*

(32) Methasterone (2 $\alpha$ ,17 $\alpha$ -dimethyl-5 $\alpha$ -androstan-17 $\beta$ -ol-3-one)

\* \* \* \* \*

(58) Prostanazol (17 $\beta$ -hydroxy-5 $\alpha$ -androstan-3,2-c]pyrazole)

\* \* \* \* \*

Dated: July 13, 2012

Michele M. Leonhart  
Administrator

**Note:** The following appendix will not appear in the Code of Federal Regulations.

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